CLAIMS

1. A bipolar electrostatic chuck which has a first electrode and a second electrode in an interior of an insulating material, and allows a surface of the insulating material to function as a sample attracting plane, characterized in that:

the insulating material has the first electrode, an interelectrode insulating layer, and the second electrode in the order of distance from the sample attracting plane in a depth direction of the insulating material; and

the second electrode has an area that is not overlapped with the first electrode in a normal line direction of the sample attracting plane.

2. The bipolar electrostatic chuck according to claim 1, wherein the insulating material has an upper insulating layer, the first electrode, the interelectrode insulating layer, the second electrode, and a lower insulating layer in the order of distance from the sample attracting plane in the depth direction of the insulating material.

3. The bipolar electrostatic chuck according to claim 1 or 2, wherein the second electrode is not overlapped with the first electrode in the normal line direction of the sample attracting plane.

4. The bipolar electrostatic chuck according to claim 3, wherein:

the first electrode is formed in a band-like comb teeth configuration, the second electrode is formed in a band-like comb teeth configuration;

the band-like comb teeth of the first and second electrodes are alternately

arranged; and

the second electrode is not overlapped with the first electrode in the normal line direction of the sample attracting plane.

5. The bipolar electrostatic chuck according to claim 1 or 2, wherein a part of the second electrode is overlapped with the first electrode in the normal line direction of the sample attracting plane.

6. The bipolar electrostatic chuck according to claim 5, wherein:

the first electrode is formed in a band-like comb teeth configuration;

the second electrode is formed in a plane having a given area; and

a part of the second electrode is overlapped with the first electrode in the normal line direction of the sample attracting plane.

7. The bipolar electrostatic chuck according to claim 5, wherein the first electrode is formed in a curb configuration, the second electrode is formed in a plane having a given area, and a part of the second electrode is overlapped with the first electrode in the normal line direction of the sample attracting plane.

8. The bipolar electrostatic chuck according to claim 5, wherein:

the first electrode is formed in a mesh configuration having a plurality of openings each of which is shaped in a circle, a triangle, a square, a rectangle, or a polygon more than a quadrangle in number of corners within a given area;

the second electrode is formed in a plane having a given area; and

a part of the second electrode is overlapped with the first electrode in the

normal line direction of the sample attracting plane.

9. The bipolar electrostatic chuck according to claim 5, wherein:

the first electrode is formed in a ring configuration having a given width;

the second electrode is formed in a plane having a given circular area; and

a part of the second electrode is overlapped with the first electrode in the normal line direction of the sample attracting plane.

10. The bipolar electrostatic chuck according to claim 5, wherein:

the first electrode centers on a circular portion having a given circular area, has a first annular portion that is concentrically disposed at a given interval from the circular portion, and has a first connection portion that connects the circular portion and the first annular portion; and

the second electrode is formed in an annular configuration having a width smaller than an interval between the circular portion and the first annular portion of the first electrode, and is disposed between the circular portion and the first annular portion of the first electrode when viewed in the normal line direction of the sample attracting plane.

11. The bipolar electrostatic chuck according to claim 5, wherein:

the first electrode centers on a circular portion having a given circular area, has a first annular portion that is concentrically disposed at a given interval from the circular portion, and has a first connection portion that connects the circular portion and the first annular portion; and

the second electrode is formed in an annular configuration having a width same as an interval between the circular portion and the first annular portion of the first electrode, and is disposed between the circular portion and the first annular portion of the first electrode when viewed in the normal line direction of the sample attracting plane.

12. The bipolar electrostatic chuck according to claim 10 or 11, wherein:

the first electrode has two or more first annular portions that are concentrically arranged at a given interval; and

the second electrode has two or more second annular portions that are concentrically arranged at a given interval, and has a second connection portion that connects between the respective second annular portions.

13. The bipolar electrostatic chuck according to claim 1 or 2, wherein a distance between the first electrode and the second electrode is equal to or more than 1 μm and equal to or less than 1000 μm.

14. The bipolar electrostatic chuck according to claim 1 or 2, wherein:

the first electrode is formed in a band-like comb teeth configuration; and

in the case where a band-like electrode width z of the first electrode and an interelectrode gap z are made equal to each other, z is in a range of 0.15 to 0.5 mm.

15. The bipolar electrostatic chuck according to claim 1 or 2, wherein the interelectrode insulating layer is formed of a resin layer made of one or more

resins selected from the group consisting of polyimide, polyamide-imide, polyester, polyethylene terephthalate, epoxy, and acryl.

16. The bipolar electrostatic chuck according to claim 1 or 2, wherein the resin layer is formed of one or more resin films.

17. The bipolar electrostatic chuck according to claim 1 or 2, wherein the interelectrode insulating layer is formed of a ceramic layer made of one or more elements selected from the group consisting of aluminum oxide, aluminum nitride, silicon carbide, zirconia, and titania.

18. The bipolar electrostatic chuck according to claim 1 or 2, wherein the interelectrode insulating layer is formed of one or two elements selected from the group consisting of silicon and silicon dioxide.

19. The bipolar electrostatic chuck according to claim 1 or 2, wherein:

an electrically conductive layer is further formed on the surface of the insulating material; and

the surface of the electrically conductive layer serves as the sample attracting plane.

20. The bipolar electrostatic chuck according to claim 1 or 2, wherein a sectional configuration of a part or all of the first electrode taken along the normal line direction of the sample attracting plane comprises a configuration selected from the group consisting of a rectangle, a square, a circle, and a

triangle.

21. The bipolar electrostatic chuck according to claim 1 or 2, wherein a sectional configuration of a part or all of the second electrode taken along the normal line direction of the sample attracting plane comprises a configuration selected from the group consisting of a rectangle, a square, a circle, and a triangle.